

Application No. 10/713,606  
Art Unit 1752, Examiner Welke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 6

## Appendix A

(i) New Claims 25~44, and

(ii) Status of all pending claims (25~44)

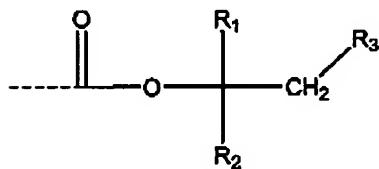
---

1~24. (canceled).

25. (new) In an electronic device that comprises a substrate having conductive properties, a process for fabricating a protective layer, comprising

(a) applying to the substrate a protective layer composition to form a protective layer thereon, wherein the protective layer composition comprises a polymer comprising, as polymerized units, monomers of which at least 50 mole percent comprise a structure selected from the group consisting of:

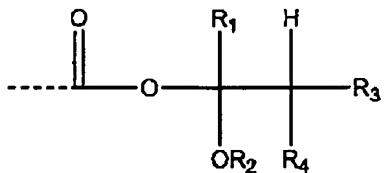
(I)



wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> is hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 linear or cyclic carbon atoms;

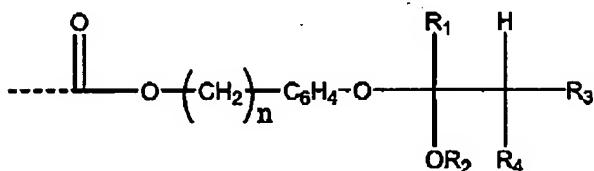
(II)

Application No. 10/713,606  
 Art Unit 1752, Examiner Walke  
 Docket No. CL-2229 US NA  
 September 18, 2006  
 Page No. 7



wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 carbon atoms, and the joining of R<sub>1</sub> and R<sub>2</sub>, or R<sub>1</sub> and either R<sub>3</sub> or R<sub>4</sub>, or R<sub>2</sub> and either R<sub>3</sub> or R<sub>4</sub> to form a 5-, 6-, or 7-membered ring;

(III)



wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 carbon atoms, and the joining of R<sub>1</sub> and R<sub>2</sub>, or R<sub>1</sub> and either R<sub>3</sub> or R<sub>4</sub>, or R<sub>2</sub> and either R<sub>3</sub> or R<sub>4</sub> to form a 5-, 6-, or 7-membered ring; and n is 0 to 4; and (IV) mixtures of (I), (II) and/or (III);

- (b) irradiating the protective layer through a mask;
- (c) heating the device;
- (d) contacting the protective layer with a developing solution to remove the portions of the protective layer composition exposed to radiation in step (b) and form a patterned protective layer;
- (e) irradiating the patterned protective layer; and
- (f) heating the device.

Application No. 10/713,606  
Art Unit 1752, Examiner Walke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 8

26. (new) The process of Claim 25 wherein the protective layer composition comprises a polymer comprising, as polymerized units, monomers of which at least 60 mole percent comprise a structure selected from the group consisting of (I), (II), (III) and (IV).

27. (new) The process of Claim 25 wherein the protective layer composition comprises a polymer comprising, as polymerized units, a monomer selected from the group consisting of 1-ethoxyethyl methacrylate (or acrylate), 1-butoxyethyl methacrylate (or acrylate), 1-ethoxy-1-propyl methacrylate (or acrylate), tetrahydropyranyl methacrylate (or acrylate), tetrahydropyranyl p-vinylbenzoate, 1-ethoxy-1-propyl p-vinylbenzoate, 4-(2-tetrahydropyranyloxy)benzyl methacrylate (or acrylate), 4-(1-butoxyethoxy)benzyl methacrylate (or acrylate); and mixtures thereof.

28. (new) The process of Claim 25 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, a monomer selected from the group consisting of t-butyl methacrylate (or acrylate); neopentyl methacrylate (or acrylate); 1-bicyclo{2,2,2}octyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{2,2,1}heptyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{2,1,1}hexyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{1,1,1}pentyl methacrylate (or acrylate) and their derivatives; 1-adamantyl methacrylate (or acrylate) and their derivatives; and mixtures thereof.

29. (new) The process of Claim 25 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, up to about 10 mole percent of a monomer selected from methyl methacrylate, methyl acrylate, methacrylic acid, and hydroxyl ethyl methacrylate; and mixtures thereof.

Application No. 10/713,606  
Art Unit 1752, Examiner Walke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 9

30. (new) The process of Claim 25 wherein the protective layer composition comprises 0.5-30 mole% of photoacid generator and 10-1000 ppm of photosensitizer.

31. (new) The process of Claim 25 wherein the protective layer composition has a molecular weight in the range of about 7,000 to about 1,000,000.

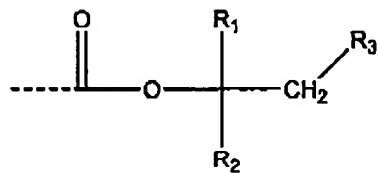
32. (new) The process of Claim 25 wherein the protective layer composition comprises a copolymer.

33. (new) The process of Claim 25 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, a monomer having a hydrophilic group.

34. (new) A process for fabricating an electronic device that comprises a substrate having conductive properties, comprising

(a) applying to the substrate a protective layer composition to form a protective layer thereon, wherein the protective layer composition comprises a polymer comprising, as polymerized units, monomers of which at least 50 mole percent comprise a structure selected from the group consisting of:

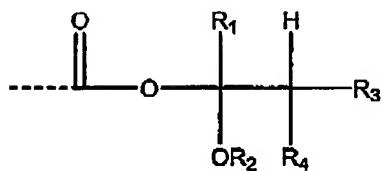
(I)



Application No. 10/713,606  
Art Unit 1752, Examiner Welke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 10

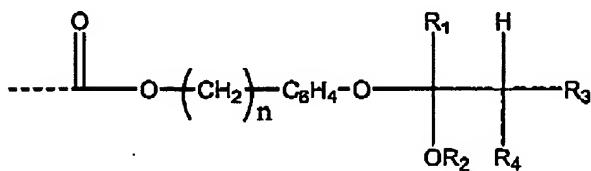
wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> is hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 linear or cyclic carbon atoms;

(II)



wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 carbon atoms, and the joining of R<sub>1</sub> and R<sub>2</sub>, or R<sub>1</sub> and either R<sub>3</sub> or R<sub>4</sub>, or R<sub>2</sub> and either R<sub>3</sub> or R<sub>4</sub> to form a 5-, 6-, or 7-membered ring;

(III)



wherein R<sub>1</sub> is hydrogen or lower alkyl, R<sub>2</sub> is lower alkyl, and R<sub>3</sub> and R<sub>4</sub> are independently hydrogen or lower alkyl; wherein lower alkyl includes alkyl groups having 1 to 6 carbon atoms, and the joining of R<sub>1</sub> and R<sub>2</sub>, or R<sub>1</sub> and either R<sub>3</sub> or R<sub>4</sub>, or R<sub>2</sub> and either R<sub>3</sub> or R<sub>4</sub> to form a 5-, 6-, or 7-membered ring; and n is 0 to 4; and (IV) mixtures of (I), (II) and/or (III);

Application No. 10/713,606  
Art Unit 1752, Examiner Walke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 11

- (b) irradiating the protective layer through a mask;
- (c) heating the device;
- (d) contacting the protective layer with a developing solution to remove the portions of the protective layer composition exposed to radiation in step (b) and form a patterned protective layer;
- (e) irradiating the patterned protective layer;
- (f) heating the device;
- (g) applying to the patterned protective layer a paste composition;
- (h) irradiating the device from the backside of the substrate to form a pattern in the paste composition; and
- (i) contacting the paste composition and the patterned protective layer with a developing solution to remove (I) the portions of the paste composition not exposed to radiation in step (h), and (II) the patterned protective layer.

35. (new) The process of Claim 34 wherein the protective layer composition comprises a polymer comprising, as polymerized units, monomers of which at least 60 mole percent comprise a structure selected from the group consisting of (I), (II), (III) and (IV).

36. (new) The process of Claim 34 wherein the protective layer composition comprises a polymer comprising, as polymerized units, a monomer selected from the group consisting of 1-ethoxyethyl methacrylate (or acrylate), 1-butoxyethyl methacrylate (or acrylate), 1-ethoxy-1-propyl methacrylate (or acrylate), tetrahydropyranyl methacrylate (or acrylate), tetrahydropyranyl p-vinylbenzoate, 1-ethoxy-1-propyl p-vinylbenzoate, 4-(2-tetrahydropyranyloxy)benzyl methacrylate (or acrylate), 4-(1-butoxyethoxy)benzyl methacrylate (or acrylate); and mixtures thereof.

Application No. 10/713,606  
Art Unit 1752, Examiner Walke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 12

37. (new) The process of Claim 34 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, a monomer selected from the group consisting of t-butyl methacrylate (or acrylate); neopentyl methacrylate (or acrylate); 1-bicyclo{2,2,2}octyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{2,2,1}heptyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{2,1,1}hexyl methacrylate (or acrylate) and their derivatives; 1-bicyclo{1,1,1}pentyl methacrylate (or acrylate) and their derivatives; 1-adamantyl methacrylate (or acrylate) and their derivatives; and mixtures thereof.

38. (new) The process of Claim 34 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, up to about 10 mole percent of a monomer selected from methyl methacrylate, methyl acrylate, methacrylic acid, and hydroxyl ethyl methacrylate; and mixtures thereof.

39. (new) The process of Claim 34 wherein the protective layer composition comprises 0.5-30 mole% of photoacid generator and 10-1000 ppm of photosensitizer.

40. (new) The process of Claim 34 wherein the protective layer composition has a molecular weight in the range of about 7,000 to about 1,000,000.

41. (new) The process of Claim 34 wherein the protective layer composition comprises a copolymer.

42. (new) The process of Claim 34 wherein the protective layer composition comprises a polymer comprising, as a polymerized unit, a monomer having a hydrophilic group.

Application No. 10/713,606  
Art Unit 1752, Examiner Walke  
Docket No. CL-2229 US NA  
September 18, 2006  
Page No. 13

43. (new) The process of Claim 34 wherein the paste composition comprises silver.

44. (new) The process of Claim 34 wherein the paste composition comprises carbon nanotubes.